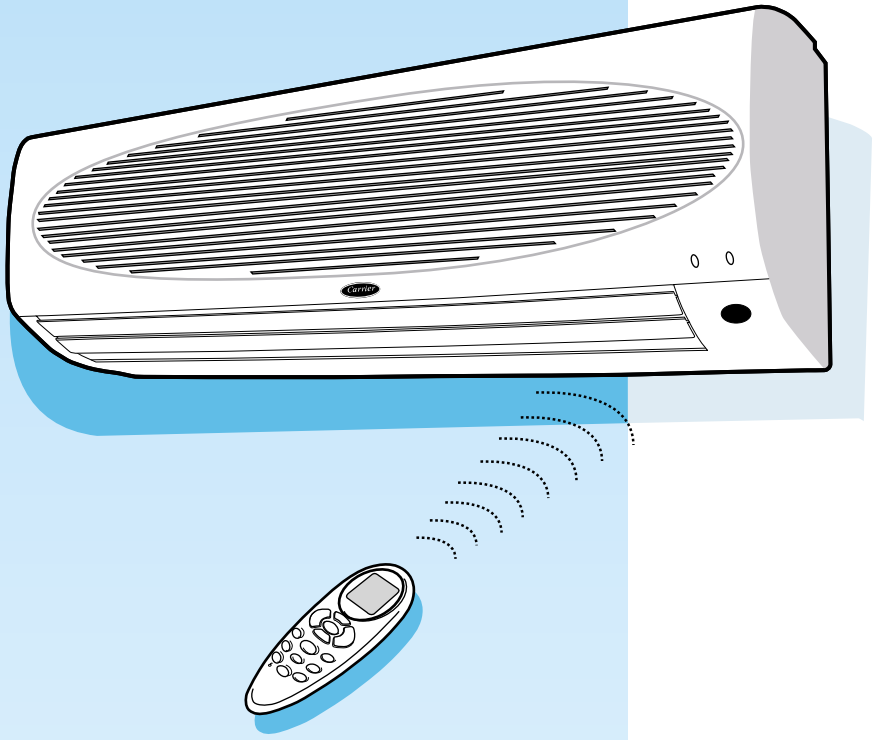
Carrier

42PQV



XPOWER INVERTER

R-410A

OWNER'S MANUAL

42PQV
Split system “Hi-Wall” indoor unit

For installation instructions of this unit and the outdoor unit, refer to the installation manuals.

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General information

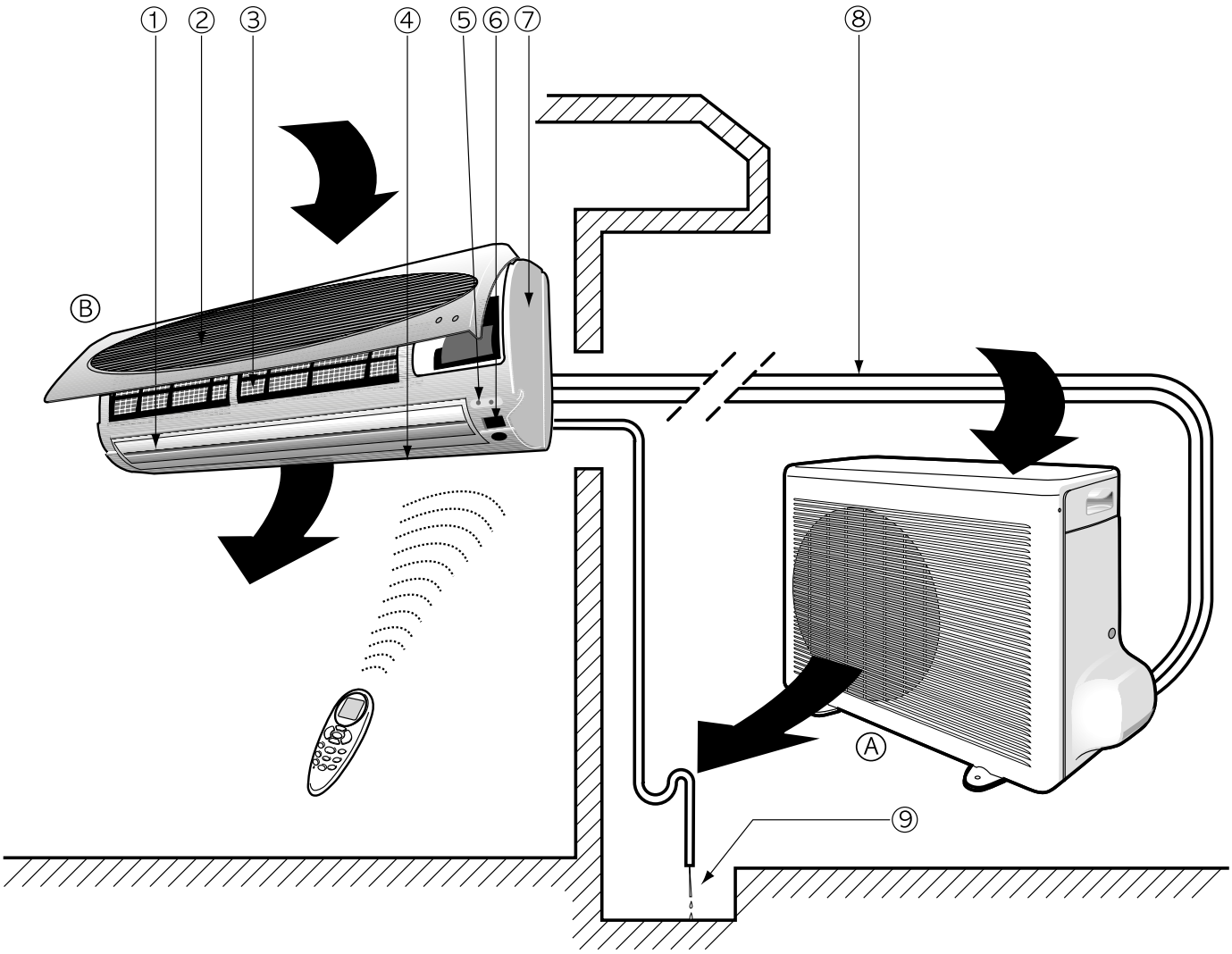
Unit operation and maintenance

Read this instruction manual thoroughly before using the unit.

- **This unit complies with low-voltage (EEC/73/23) and electromagnetic compatibility (EEC/89/336) directives.**
- Check that voltage and frequency of the mains power supply are those required for the unit; the power available must be adequate to operate any other possible appliances connected to the same line.
- Keep all operation and maintenance manuals carefully and deliver them to the next owner when the unit is passed on.
- Check that all current national safety code requirements have been followed for the installation.
  In particular **ensure that a properly sized and connected ground wire is in place.**
- Use the unit only for factory approved applications: the unit cannot be used in laundry premises.
- Do not use damaged equipment. In case of a malfunction turn the unit off and disconnect mains supply.
- Disconnect the electrical mains supply prior to any maintenance operations or prior to handling any indoor unit parts.
- The manufacturer declines any liability for damage resulting from modifications or errors in the electrical or refrigerant connections, made during the installation, or from the improper use of this equipment.
  This will void the unit warranty immediately.
- Failure to observe electrical safety codes may cause a fire hazard in case of short circuits.
- This unit will only work safely and correctly, if installed and tested by qualified personnel.
- Do not open the electronic remote controller to avoid possible damage.
  In case of malfunction contact a qualified service engineer.
- This unit contains rotating parts (fan).
  Ensure that this is out of reach for children.
- Be conscious of the room temperature and general comfort, particularly when this unit is used near children, senior or handicapped people.
- For correct use, the air conditioner must operate within the temperature limits indicated in the table “Operating limits” included in the installation manual.
  Incorrect use of the unit outside these limits results in malfunction or water dripping from the unit.
- Inspect equipment for damage due to improper transportation or handling: In case of damage file an immediate claim with the shipping company.
- Maintenance of the refrigerant circuit must only be carried out by qualified personnel.
- **All of the manufacturing and packaging materials used for your new appliance are compatible with the environment and can be recycled.**
- Dispose of the packaging material in accordance with local requirements.
- This equipment contains refrigerant that must be disposed in the proper manner.
  When disposing of the unit after its operational life, remove it carefully.
  The unit must then be delivered to an appropriate disposal centre or to the original equipment dealer for proper environmentally compatible disposal.
- Remote control batteries contain polluting elements.
  When exhausted, they must be disposed of in accordance with local requirements.

WARNING:
Do not switch off the split system by disconnecting the electric power supply.
The unit must always be switched off using the remote control.
Do not attempt to install this unit by yourself. This unit requires qualified installer.
Do not attempt to repair the unit by yourself.This unit has no components which you can repair.
Opening or removing the cover will expose you to dangerous voltages.
Turning off the power supply will not prevent potenial electric shock.
If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.

System description



A. Outdoor unit
B. Indoor unit

1. Automatic swinging louvre
2. Air return
3. Air filters
4. Air outlet

5. Unit operating status indicators
6. Remote control signal receiver

7. Unit nameplate
8. Interconnecting tubing
9. Condensate drain

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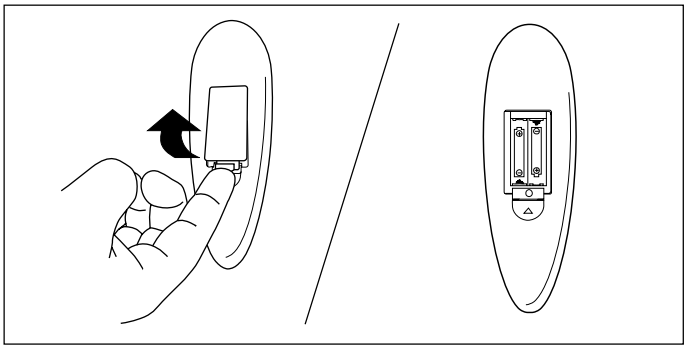
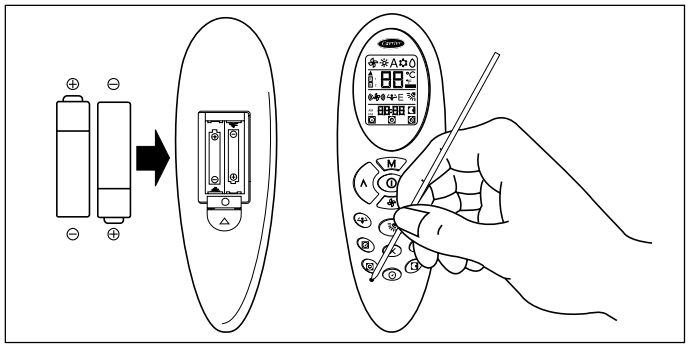
Infrared remote control

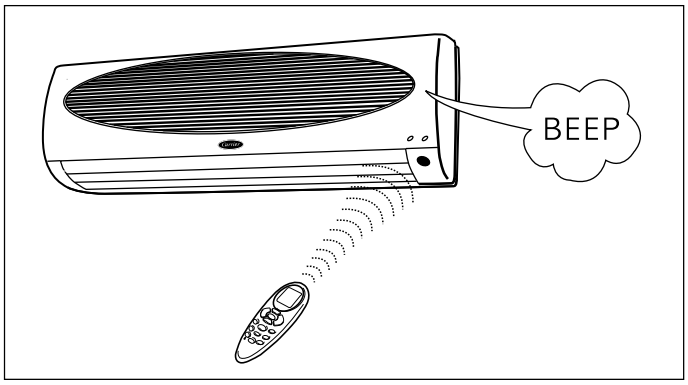


The remote control operates with two 1.5 V non re-chargeable batteries.
When the symbol ▬ appears in the display, this indicates that the batteries are exhausted.

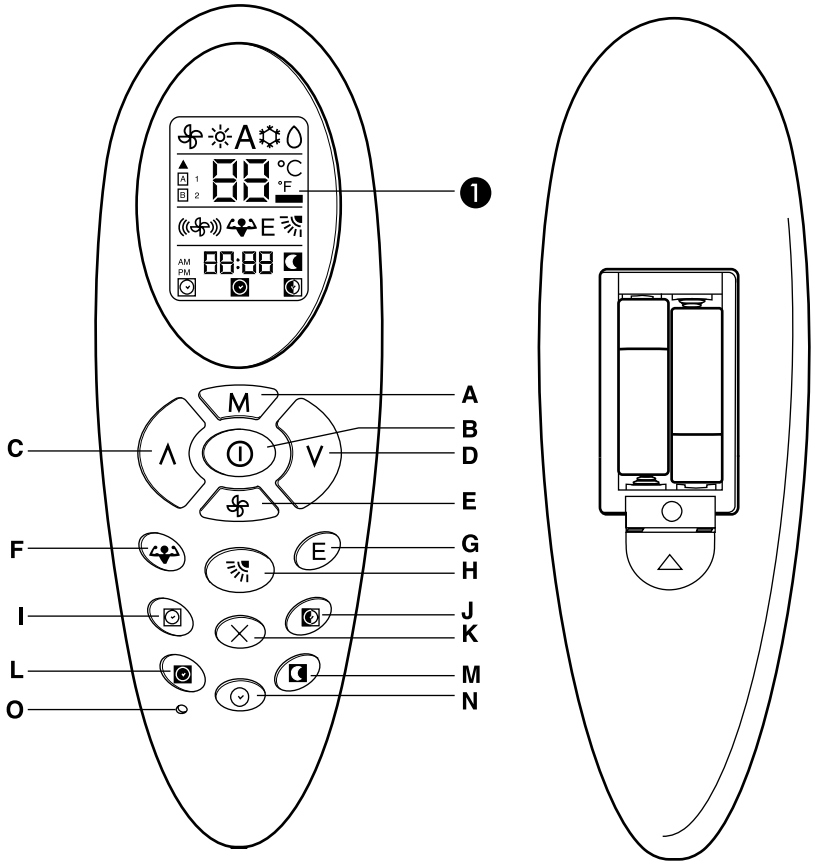
How to insert batteries:
Open embedded cover. Remove the cover of the battery compartment at the back of the remote control by pressing the tab toward inside, in the direction of the arrow.



- Remove the used batteries and insert new batteries. The remote control uses two alkaline batteries (1.5 V, LR03x2).
- Press the reset button "**O**" with a sharp object to reset the remote control.
- Do not use used batteries or batteries of different types, as this may cause the unit to malfunction.
- Batteries should only be changed after turning OFF the unit.
- The average battery life during normal use is approximately one year.
- If the air conditioner does not operate normally after replacing the batteries, remove the batteries, refit them and press the reset button "**O**" again after 5 seconds.



The maximum operating range for the remote control is approx. 5 m.
No obstructions such as curtains or plants should be between control and unit.
Direct sun on the unit receiver may interfere with good signal reception.
The control must be directed toward the unit receiver when pressing the buttons of the desired functions. An acoustical acknowledgement sound (beep) will indicate that signal has been received.



1 Display readout
A. Mode selection button
B. ON/OFF button
C. Increase temperature button
D. Decrease temperature button
E. Fan speed selection button
F. Powerful mode button
G. Economical mode button
H. Louvre control button (Flap)
I. ON timer button
J. DAILY timer button (Everyday)
K. Cancel timer button
L. OFF timer button
M. Sleep timer button (night)
N. Current time adjusting button
O. Reset button

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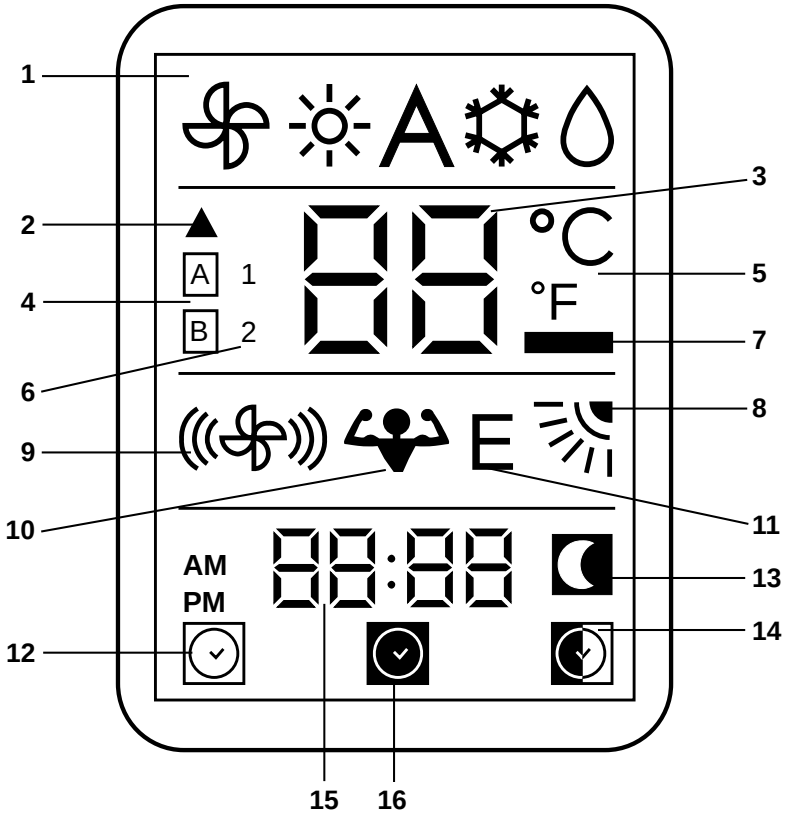
Display of selected functions



1. Signal transmission symbol
   - Ventilation (fan only)
   - Heating (heat pump models only)
   - Automatic (heat pump models only)
   - Cooling and dehumidification
   - Dehumidification only
2. Signal transmission symbol
3. Temperature selected
4. Address selected
5. Temperature unit of measurement (°C or °F)
6. Unit configuration
7. Batteries exhausted indicator
8. Louvre positioning (Flap)
9. Fan speed
10. Powerful mode
11. Economical mode
12. ON timer selected
13. Night timer active
14. DAILY timer active (Everyday)
15. ON timer and OFF timer or current time
16. OFF timer selected

Table I: Unit protection devices

Type of protection	Effect of protection	Operation mode	When on
Indoor coil high temperature protection	Compressor speed slow down or off	Heating and Auto mode	During unit operation at high ambient
Indoor coil freeze up protection	Compressor speed slow down or off	Cooling, Dry and Auto mode	During unit operation at low ambient
Discharge gas high temperature protection	Compressor speed slow down or off	Cooling, Heating, Dry and Auto mode	During unit operation at high ambient
Defrost cycle	Indoor fan off	Heating and Auto mode	During unit operation at low and humid ambient
Against frequent compressor cycling	Compressor time delay	Cooling, Heating, Dry and Auto mode	During unit operation

WARNING:
During heat pump operation the unit will undergo several defrost cycles to remove ice that might collect on the outdoor unit in very low ambient temperatures. In these cycles, fan speed will automatically stop, louvre(flap) will be fixed at horizontal position and can not be varied until defrost cycle is completed.

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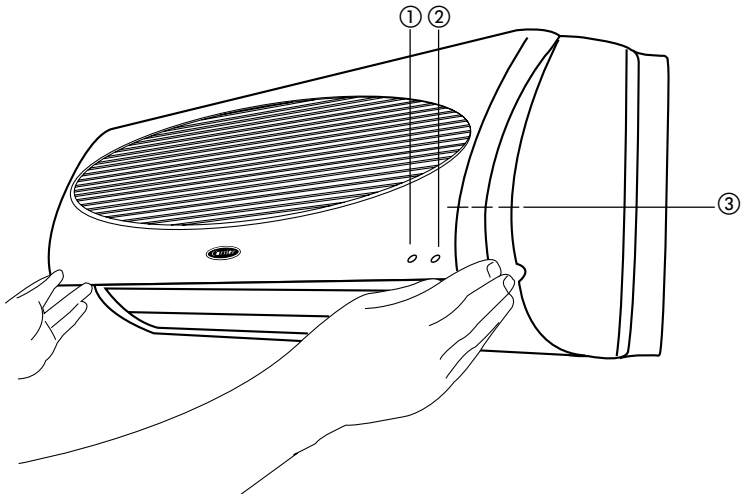
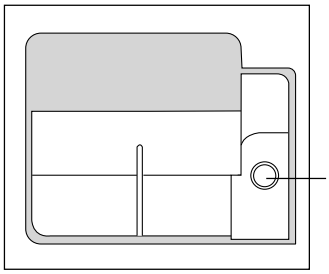
Unit display and switch panel





① Green indicator light
② Orange indicator light
③ Switch panel

Indoor unit display

- Green light: illuminated during operation.
- Orange light: illuminated during timer mode.

EMERGENCY button:

Can be used when the remote control is lost or inoperative.

Emergency operation

When the remote control is lost or damaged or the batteries are exhausted, the EMER. button can be used to run the unit.

- Press the EMER. button once briefly in the off mode condition for less than 5 seconds.
  - Based on the room temperature, the unit operates in Auto mode.
- If you want to stop the emergency operation, push the EMER. button again or operate the remote control.
- The set conditions of emergency operation are as follows:
  - Operation mode: AUTO
  - Preset temperature: 25°C
  - Fan speed: AUTO
  - Timer mode: Disabled
  - Discharge air direction: Pre-set position based on operation in "Cool" or "Heat" mode.

Table II: Periodical checks

Indoor unit	Every month	Every 4 months	Every year
Clean air filter	●(1)		
Clean drain pipe		●	
Change controller batteries			●
Outdoor unit	**Every month**	**Every 4 months**	**Every year**
Clean outdoor coil from outside		●	
Clean outdoor coil from inside (2)			●
Blow air over electric parts (2)			●
Check electric connection tightening (2)			●
Clean fan wheel (2)			●
Check fan tightening (2)			●
Clean drain pan (2)			●

For a good operation of the air conditioner it is recommended to carry out checks and maintenance as indicated.
Recommended maintenance intervals may vary depending on the installation environment, e. g. dusty zones, etc.

(1) Increase frequency in dusty zones.

(2) Operations to be carried out by qualified service personnel. Refer also to “Installation Manual”.

Use of the remote control

Start / Stop (button B)

When the air conditioner is not in operation, the remote control readout will display the time of day only (in case other symbols are lit, turn control off by pressing button ⏻).
Press button ⏻ to start the air conditioner.
All selected and memorized functions will light up and appear; the unit will operate according to the functions selected.
Press button ⏻ to stop the air conditioner.
All indicators on the unit will go out, and the control will display only the current time.
If the unit does not stop, turn the control on (by pressing button ⏻) and repeat the operation.
If button ⏻ (air conditioner starting) is pressed too soon after a stop, the compressor will not start for 3minutes due to the inherent protection against frequent compressor cycling.
The unit will only emit a “beep”, when the signals are received correctly.

Selection of the operating mode (button A)

With this button the operating mode of the air conditioner can be selected.
By repeatedly pressing this button the available modes will be selected in sequence.
The choosen mode is shown as follows, while the unit will acknowledge signal receipt with a confirming beep.

Indicated Symbol

- Ventilation (fan only).
- Heating.
- Automatic.
- Cooling with dehumidification.
- Dehumidification only.

Temperature setting

UP (button C)

DOWN (button D)

Pressing the UP ∧ and DOWN ∨ buttons will increase or decrease the temperature from the previously set value.
The unit will confirm signal receipt with a beep, and the value of the set temperature on the display will change accordingly.
The temperature can be set between 17°C (63°F) and 32°C (90°F) at 1 degree intervals.
In cooling mode, if the temperature selected is higher than the room temperature the unit will not start; the same applies for the heating mode, if the selected temperature is lower than the room temperature.

Selecting direction of air flow louvre (button H)

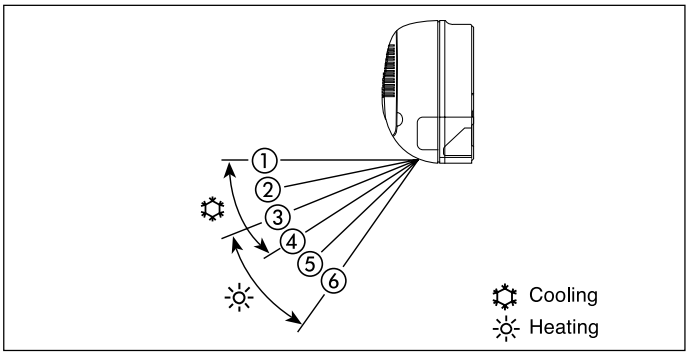
The air flow direction can be adjusted to optimize air distribution in the room.
Press button repeatedly to choose one of the following louvre positions:

Symbol on display

Air direction will be set automatically.
Louvre will be set to the preset position according to the operation mode.

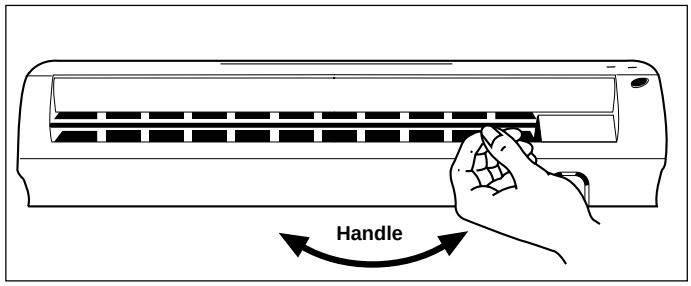
6 positions can be chosen.
The louvre can be set to one of 6 different air flow directions.

The louvre will continuously swing up and down. "Swing" always assures optimal even air distribution in the room.



In the COOL DRY and FAN mode, the louvre will swing in the cooling range. In the HEAT mode, the louvre will swing in the heating range.

Note:
Always use the remote control to adjust the louvre position, otherwise abnormal operation may occur. If you manually adjust the louvre out of its range, please turn the unit off and then on again.



Left and right control
If you want to adjust the direction of the discharge air to the left or right, adjust the vertical guide vane with the handle after opening the louvre.

Note:
- Please do not set the louvre to position ⑥ for a long time, because this position minimises air circulation resulting in uneven room temperature.
- Do not adjust the louvre by hand during SWING operation because it may damage the air swing mechanism.
- If you want maximum cooling or heating capacity, please set louvre to position ④.

Selecting the fan speed (button E)

The fan speed can be selected by pressing button .

Indicated symbol

- Low speed (for night operation)
- Medium speed
- High speed (at start-up, to reach temperature)
- Automatic (fan speed will automatically switch to the value required for optimum comfort).

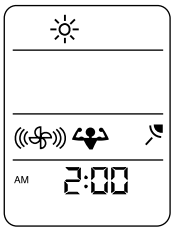
Use of the remote control

Powerful (button F)

If you want more powerful capacity at Cooling, Dry and Heating mode, press button . On the display, the powerful icon will start flashing.

1. Powerful at Cooling mode

Performs the powerful cooling operation until room temperature reach 17°C or 20minuts after pressing Powerful button. At this mode, indoor fan speed is high and compressor speed is over rating speed in order to obtain maximum cooling capacity.



2. Powerful at Heating mode

Performs the powerful heating operation until room temperature reach 32°C or 20minuts after pressing Powerful button. At this mode, indoor fan speed is high and compressor speed is over rating speed in order to obtain maximum heating capacity.

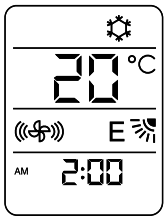
3. Powerful at Dry mode

Performs the effective dry operation until room temperature in under 17°C or 3hours after pressing Powerful button. At this mode, indoor fan speed is low in order to remove humidity more effectively.

During Powerful mode, you cannot control room temperature, and fan speed.
Press one of the buttons , or **E** to cancel the powerful mode.

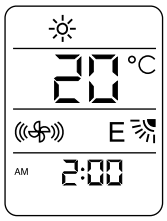
Economical E (button G)

If you want silent and mild operation at cooling, heating and Auto mode, press button **E** . On the display, the economical icon **E** will start flashing.



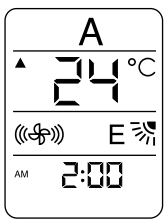
1. Economical at Cooling mode

Indoor fan rotates under low fan speed and compressor speed is under rating speed.



2. Economical at Heating mode

Indoor fan rotates under low fan speed and compressor speed is under rating speed.



3. Economical at Auto mode

Unit operates Economical cooling mode or Economical heating mode depending on room temperature.

During Economical mode, you can control room temperature and flap position except fan speed.
Press one of the buttons , or **E** to cancel.

ON timer procedure

1. ON TIMER button (button I)

Press this button, even if the remote control is OFF. The relevant icon and time figure will start to flash.
If 10 seconds have elapsed and no button is pressed, the remote control turns OFF (if it was already OFF when button was pressed) or timer function automatically deactivates.

2. HOUR/MINUTE buttons (buttons ∧ and ∨)

If the unit is ON, the only possible selection is the start-up time.
The unit will operate with the selections shown on the display.

3. HOUR/MINUTE buttons (buttons ∧ and ∨)

If the unit is OFF: to select the start-up time, use the temperature cotrol buttons (buttons ∧ and ∨).
First select the hours and, afrer have confirmed these by pressing button , select the minutes using either button ∧ or ∨ .
To definitively set the time, press button again.

4. Operating mode

Choose the unit operating mode.
The icons will flash.
To select the mode, use the button .
Once the mode has been decided, press button . The icon of the selected mode will stop flashing.

5. Desired temperature

To select the desired temperature, (the value is flashing, use either button ∧ or ∨ .
Push button , to confirm the selection.
Numbers will stop flashing.

6. Fan speed

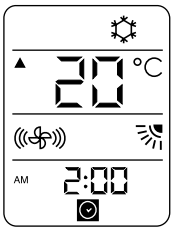
Choose the fan speed, using button .
When the selection has been completed, press button for confirmation.
The icon will stop flashing.

7. Louvre positioning

Now this icon is flashing.
Use button , to select desired position.
Press button for confirmation.
Now all icons are fixed on display.
If you want to cancel selections up to here inserted, push button ×; if you want to cancel all options once timer has been set, push button and then ×.

Use of the remote control

OFF timer procedure



1. OFF TIMER button (button L)

Press button .
The OFF timer icon and numbers for time selection are flashing.
This function can be set even if the remote control is OFF.

2. HOUR/MINUTE selection buttons (buttons ∧ and ∨)

To set the clock time, press either button ∧ or ∨.
To move from hour to minute, press button .
Press button again to cofirm.

DAILY timer (Everyday-button J)

Push the button when the ON or OFF timer is active. The icon will appear on display. In this way the ON and OFF timer memorization will be repeated every day. To disactivate the daily function, press again the button .

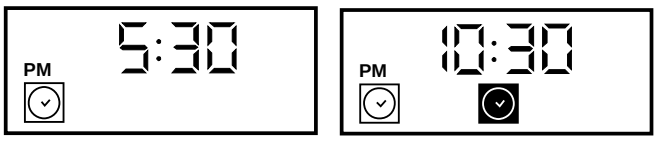
Combination of ON, OFF and DAILY timer procedure

If you want operation to start at 5:30 P.M. and stop at 10:30 P.M. proceed as follows :

1. Select ON timer at 5:30 P.M.

2. Select OFF timer at 10:30 P.M.

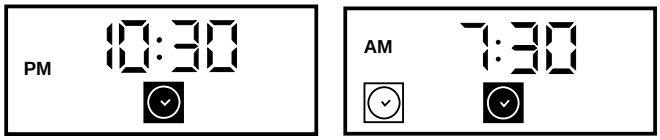
3. Select desired operating mode (button M).



If you want to stop operation at 10:30P.M. and start again at 7:30 A.M. with the same operating mode, preceed as follows :

1. Select OFF timer at 10:30 P.M. during operation.

2. Select ON timer at 7:30 A.M.

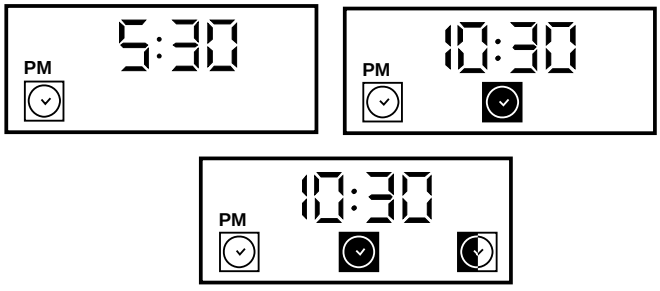


If you want Everyday operation to start at 5:30 P.M. and stop at 10:30 P.M. proceed as follows :

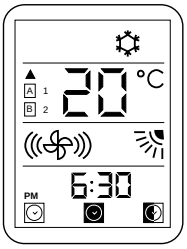
1. Select ON timer at 5:30 P.M.

2. Select OFF timer at 10:30 P.M.

3. Press the EVERYDAY button daily button .



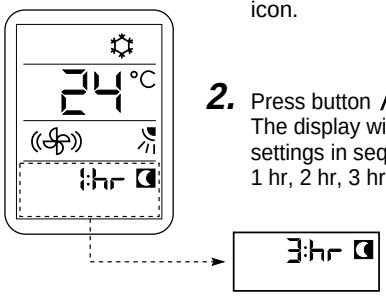
Cancellation of ON, OFF and DAILY timer procedure



1. If you want to cancel On or OFF timer setting, press the following buttons in sequence:
•button or ;
•button .
To deactivate the Everyday function, press button will remain operation .
The Everyday function will remain operative until one of the two timers (ON or OFF) is active.

Sleep timer procedure "night" (button M)

Press this button to set the SLEEP timer with remote control on.
The icon will apear on the display.
This prodedure permits setting the remaining unit operating time.

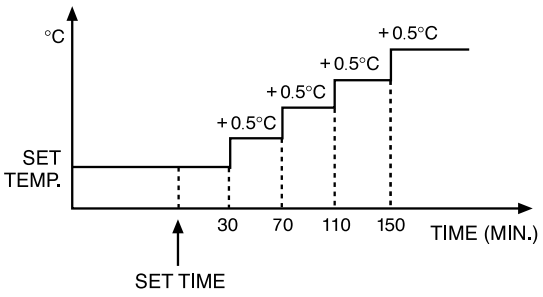


1. "1:hr" will be displayed together with the icon.

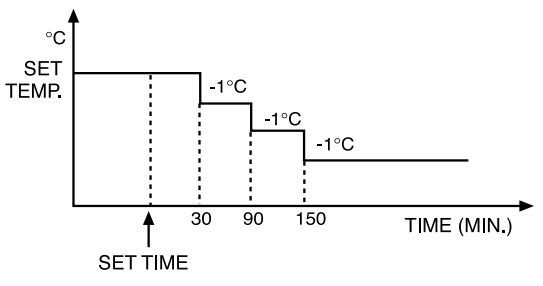
2. Press button ∧ (temperature increase).
The display will show the following settings in sequence:
1 hr, 2 hr, 3 hr, 4 hr, 5 hr, 6 hr, 7 hr and 9:hr.

3. Once the remaining operating hours have been selected with either button ∧ or ∨, again press button to confirm.

4. When the SLEEP timer is set, the unit will control the set temperature to avoid ovecooling or overheating during operation. The set temperature will change as follows:



(Cooling only or dehumidification)



(Heating)

Current time adjusting and reset buttons (buttons N and O)

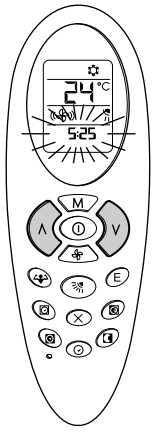
Press current time adjusting button to adjust the current time.
Press reset button "**O**" with a sharp object if the remote control is not operating properly or after replacing the batteries.

Setting current time (button N)

1. With the remote control ON or OFF, keep pressing button for at least 5seconds.

2. The current hour figure flashes.
Press either button ∧ or ∨ to set the current hour.
Press button to move to minutes and set them.

3. For this setting always use either button ∧ or ∨ .



4. Once the current time is set, press button to confirm it.

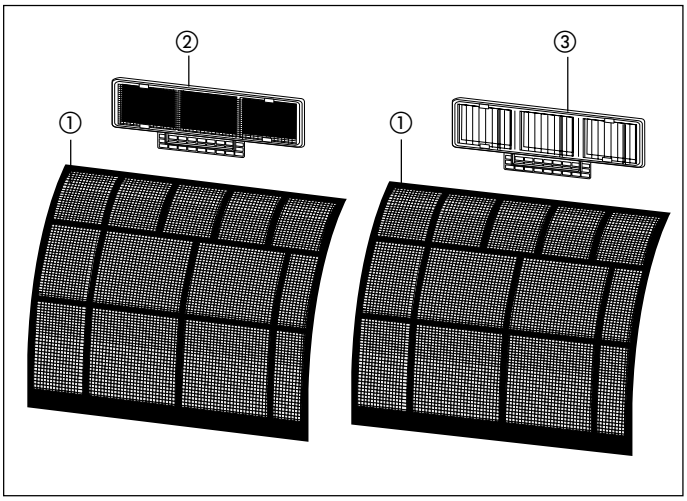
Address selection

If you have two indoor units in the same room, you can link one remote control to one indoor unit, and the other remote control to the other indoor unit, or you can control both indoor units with a single remote control.

For configuration, refer to the installation manual.

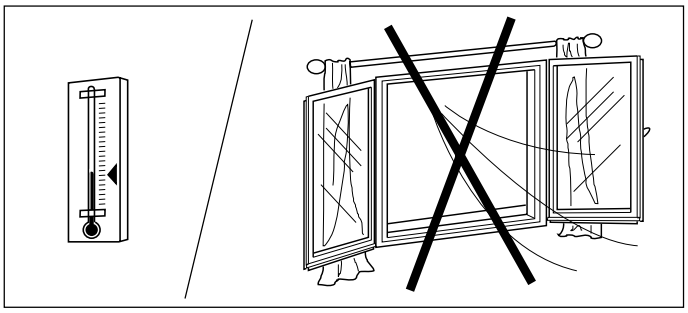
42PQV Air cleaning system, optimum comfort and lowest consumption, correct cleaning

Air cleaning system

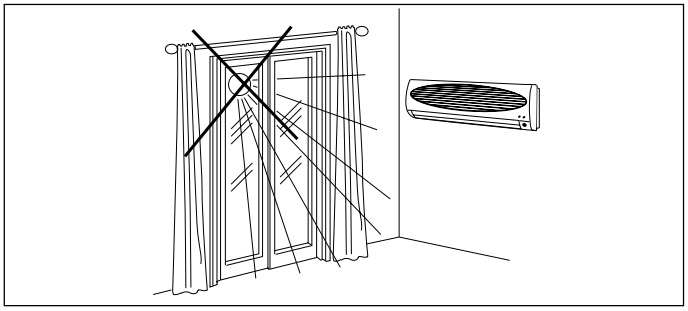


① *Standard air filters:* they eliminate dust and lint.
② Standard electrostatic filter + photocatalytic filter : this effectively eliminates microscopic dust and cigarette smoke in the room air.
③ Electrostatic filter + Active carbon filter : this is particularly effective in eliminating odor and microscopic dust.

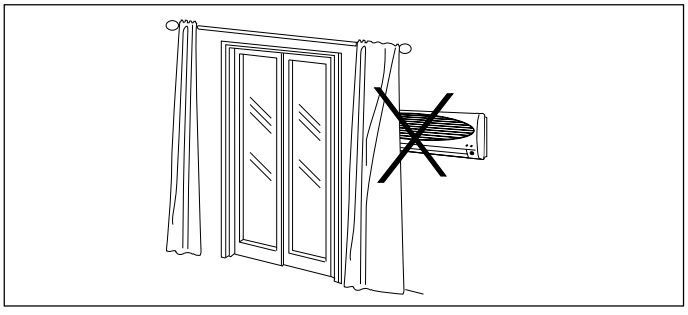
Optimum comfort and lowest consumption



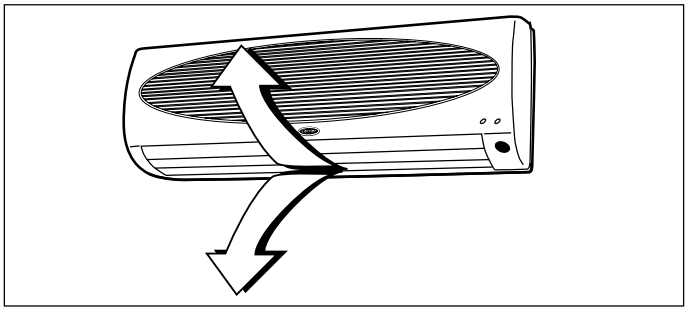
Keep room temperature at comfort levels.
Do not open doors and windows more frequently than necessary.



When cooling, avoid direct sun in the room: if possible, shut curtains or shades.



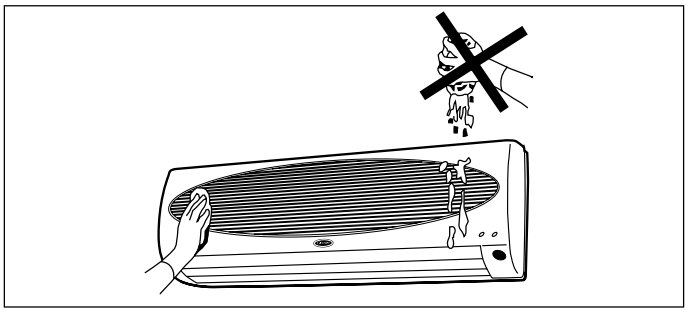
Do not obstruct the air intake or outlet of the unit. Obstructions will cause a reduction of the air quantity and the conditioning effect, resulting in unit malfunction.



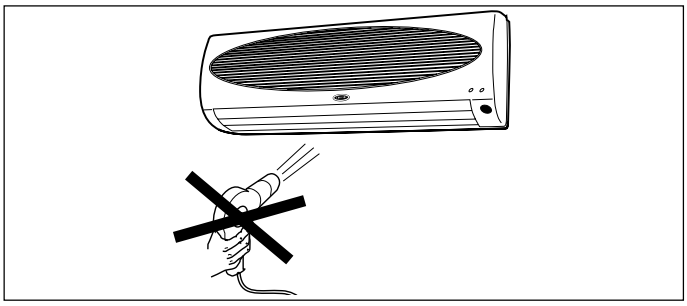
Ensure that the air distribution in the room is uniform by properly adjusting the air flow direction.

Correct cleaning

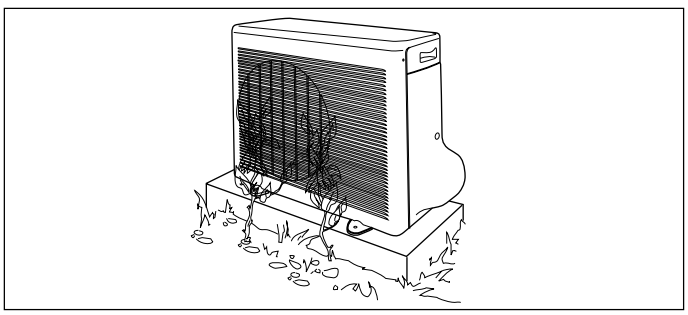
• Turn the unit off and switch the mains supply off.



Use only a clean, damp and soapy cloth. Do not pour any liquids on the unit. Do not use flammable liquids, solvents or abrasive powders.



Keep heat sources away from the unit and do not place anything hot on it; panels may be damaged.
The remote control should only be cleaned with a dry cloth.



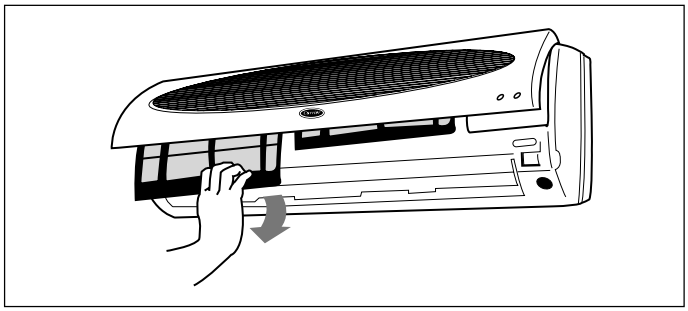
Occasionally clean the area around the outdoor (leaves etc.) to avoid reduced air circulation.

42PQV

Cleaning, maintenance, before a long shutdown period

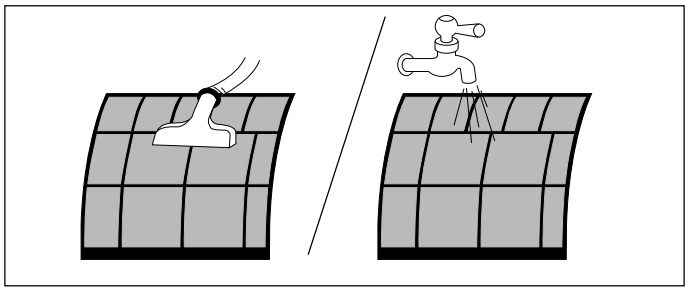
Filter cleaning

Clean filters in accordance with the actual operating conditions and times.



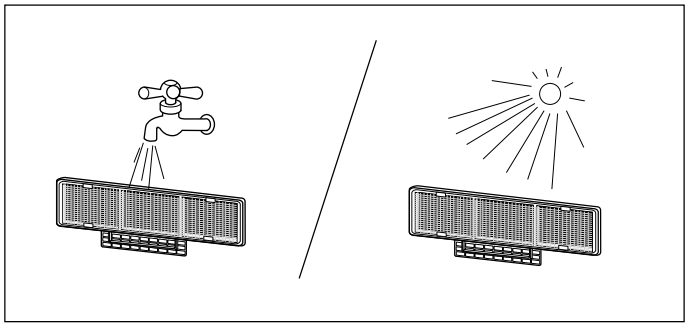
Lift the front panel and pull the air filters downward.

Standard filter cleaning



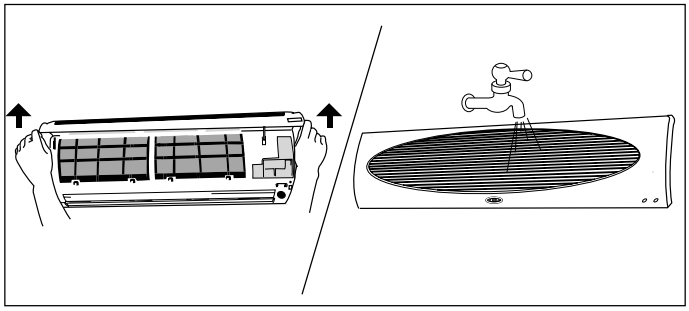
Vacuum clean or rinse under running water after using a month.
Put the filters back in the correct position.

Cleaning of optional filters



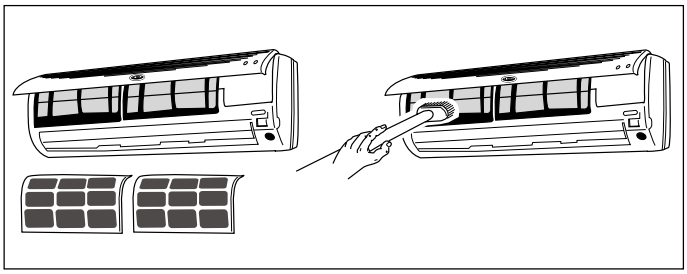
- Clean photocatalytic filters by washing them under running water (without any detergent) and regenerate them by exposing ithem to sunlight for 6 hours.
- Clean active carbon filter by washing with neutral detergent, rinsing and drying under sunlight.
- Replace active carbon and photocatalytic filters every two years.
- Replace electrostatic filters every three months.
- Replace active carbon filter every two years.

Washing the front panel



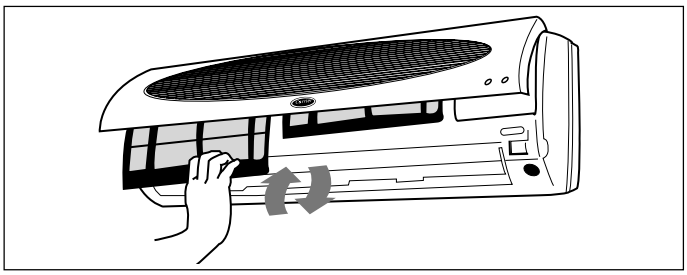
Lift the front panel up to the top of the unit.
Then separate the front panel from the unit.
Rinse the panel under running water, and dry it completely in a shaded area.

Air conditioner maintenance

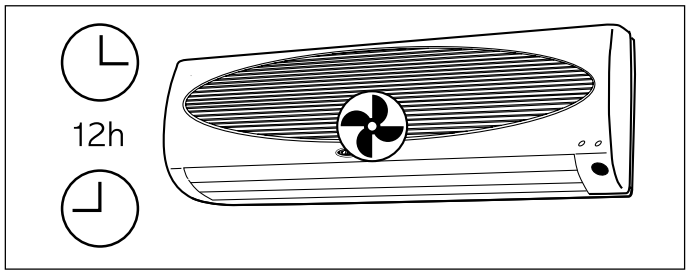


Cleaning unit coil:
It is recommended to clean the coil at least at the beginning of each cooling season or when necessary; turn the unit off first.
- Use a vacuum cleaner or a long-bristle brush to avoid damage to the coil fins.
- Watch the fin edges to avoid injury.
- Damage to the fins may cause reduced coil efficiency resulting in increased running costs. Use of flames, liquid or aerosol solvents must be avoided. Use of these substances will cause serious damage to the panels and electric parts.

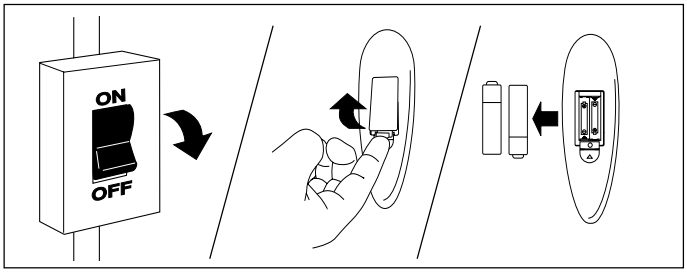
Before a long shutdown period



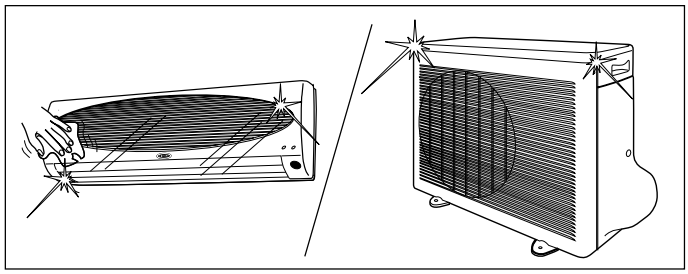
Clean filters and reposition them in the unit.



Keep the unit in operation for half a day in ventilation (fan only) mode in order to dry all the internal parts.



Switch the electric mains supply off.
Take the batteries out of the controller.



Clean indoor and outdoor units.

Operating features and care - Troubleshooting

Operating conditions

• Temperature ranges suitable for unit operation are as follows.

MODE	INDOOR	OUTDOOR
COOL	15~32°C	15~43°C
HEAT	Max. 27°C	-10~21°C
DRY	15~32°C	15~43°C

• If the unit operates beyond max. temperature conditions for a long time, system diagnostics may detect a malfunction and the unit will not operate properly.
• If the unit operates for a long time under abnormal conditions with extremely high humidity, condensed water may drip from the unit.

Time delay

• If you start operation after the power is turned off, there will be a 3 minute time delay until the compressor turns on.
• When heating operation starts, hot air delivery might be delayed due to a warm-up period.

Minimum operation time

• In normal operation, there is a minimum operation time of 5~7 minutes between the compressor turning on and turning back off.

Heating features

• If the unit starts in heating mode, there will be a preheating period before the unit is ready to deliver warm air.
• If the outdoor temperature is low, heating capacity will be reduced. If the room air is not warm enough during severe winter conditions, use additional heating devices.

Defrost operation

• In heating mode, if the outdoor coil is frosted, the indoor fan and outdoor fan will turn off while the compressor will turn on to remove the frost on the outdoor coil.
• The system will automatically revert to normal operation when frost is removed from the outdoor unit.

Auto recovery

• If the power fails while the unit is operating, the unit memorizes the operating condition, and it will start operation automatically when the power is restored or turn off, depending on the configuration of the unit control.

Indoor unit frost prevention

If the unit operates at a low ambient temperature, frost may appear on the indoor coil. If the indoor coil temperature is near 0°C, the microcomputer reduces or stops the compressor's speed to protect the unit from frost.

Normal operation

Any of the following can occur during normal operation:
• A gurgling noise can sometimes be heard during operation or when the unit stops.
  - This is the sound of the refrigerant flowing through the unit.
• Bad odours can come from the unit.
  - Odours such as smoke or cosmetics can accumulate while room air circulates through the unit.
  - Cleaning the filters will reduce this problem.
• The outdoor fan does not rotate during heating operation. (For heat pump models only).
  - The unit is in defrost mode.
• A crackling sound can sometimes be heard during operation or when the unit turns on.
  - It is the sound of plastic expanding due to an abrupt temperature change.

Troubleshooting

Trouble / Check points / Action /

Unit does not operate:

• Has the circuit breaker tripped or the fuse blown?
RESET THE CIRCUIT BREAKER OR REPLACE THE FUSE WITH THE SPECIFIED REPLACEMENT FUSE.

• Has there been a power failure?
RESTART OPERATION WHEN THE POWER IS RESTORED.

• Does the green light or the orange light flash on and off?
CALL YOUR SERVICE REPRESENTATIVE.

• Is the voltage too low?
CONFIRM THE AVAILABLE VOLTAGE.

Cooling is abnormally low:

• Is the filter blocked with dust?
CLEAN THE AIR FILTER.

• Has the temperature been set properly?
CHECK AND RESET IT IF NECESSARY.

• Are the windows or doors open?
CLOSE THE WINDOWS AND DOORS.

• Is anything obstructing the outdoor unit?
REMOVE THE OBSTRUCTION.

• Is the fan speed too low?
CHANGE THE FAN SPEED SELECTION.

• Is the operation mode FAN or AUTO?
CHANGE TO COOLING OPERATION OR RESET

Heating is abnormally low :

• Is the filter blocked with dust?
CLEAN THE AIR FILTER.

• Has the temperature been set too low?
CHECK AND RESET IT IF NECESSARY.

• Are the windows or doors open?
CLOSE THE WINDOWS AND DOORS.

• Is anything obstructing the outdoor unit?
REMOVE THE OBSTRUCTION.

Unit stops during operation:

• Is the OFF timer operating?
RESTART THE OPERATING MODE.

• Does the green light or the orange light flash on and off?
CALL YOUR SERVICE REPRESENTATIVE.

ATTENTION:
If the above actions do not correct the problem, consult the dealer from whom you bought the unit.

The manufacturer reserves the right to change any product specifications without notice.
May, 2004

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